


What Every Principal Needs to know About the Teaching and learning of mathematics!
March 24th, 2012

"These standards are not intended to be new names for old ways of doing business. They are a call to take the next step. It is time for states to work together to build on lessons learned from two decades of standards-based reforms. It is time to recognize that standards are not just promises to our children, but promises we intend to keep."

Timothy D. Kanold
tkanold.blogspot.com

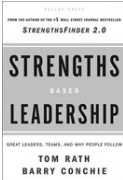


Positive High Relational Energy school Leadership Important?
Rath and Conchie (2008)

Weaknesses: 9%

Strengths: 73%

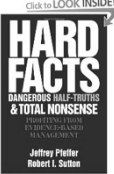
Full Engagement



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Is Positive High Energy School Leadership Important?
Pheffer and Sutton (2008)

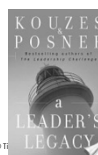
60-75% worse aspect of the job is their boss



Positive High Relational Energy Leadership Important?
Kouzes and Posner (2006)

The single best predictor of career success...

Is the quality of your relationship with your very first supervisor



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State or Federal Standards?

SC Senate panel debates bill blocking Common Core education standards already adopted

THE ASSOCIATED PRESS
First Posted: February 23, 2012 - 9:51 am
Last Updated: February 23, 2012 - 9:51 am

COLUMBIA, S.C. — South Carolina senators are discussing whether to block the implementation of nationwide education standards in math and reading.

A Senate panel is holding a second meeting Thursday on the so-called Common Core education standards. No vote was taken last week.

The Common Core **States'** Standards

The CCSSI in mathematics and ELA were commissioned by the NGA and CCSSO

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NATIONAL GOVERNORS' ASSOCIATION

CCSSO
Council of Chief State School Officers

<http://www.corestandards.org/>

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The Common Core **States'** Standards

Two Assessment Consortia

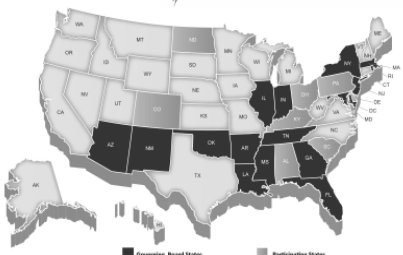
PARCC Partnership for Assessment of Readiness for College and Careers

Smarter Balanced Assessment Consortium

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The PARCC Consortium

PARCC Partnership for Assessment of Readiness for College and Careers




■ Governing Board States ■ Participating States

▪ <http://www.parcconline.org/>

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Smarter Balanced (SBAC)



■ Governing Board States ■ Participating States

▪ <http://www.k12.wa.us/SMARTER/States.aspx>

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Governing Board States


- Pilot the assessment system components during 2012–13 and 2013–14 school years
- Administer the new assessment system during the 2014-15

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State Assessment Improvements

- A mix of item types – short answer and... longer open response performance-based (Up to 50%)
- And Richer multiple choice items

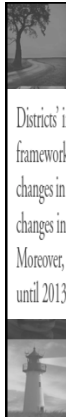
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Assessment Improvements

- Will help students develop an understanding of the subject matter, rather than just narrowing instruction in order to "teach to the test"
- The **WYTIWYG** Phenomena


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Common Core State Standards: Progress and Challenges in School Districts' Implementation

Districts' implementation of the CCSS will very likely depend on how quickly states put in place the necessary framework. Most of the states responding to our state survey on CCSS implementation expect to accomplish changes in professional development programs by 2012 or earlier, but many do not expect to fully implement major changes in assessment, curriculum, teacher evaluation, and teacher certification until 2013 or later (CEP, 2011b). Moreover, many states do not plan to institute a requirement for local districts to implement the common standards until 2013 or later.

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PARCC and Smarter Balanced Website pages...


- See posted handout and...
- <http://www.parcconline.org/>
- <http://www.k12.wa.us/SMARTER/States.aspx>

Note: The Consortia Frameworks will be the key impact on your local district and curriculum design committees...

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1989



Principles & Standards
1989^{or} SCHOOL MATHEMATICS
HIGHER STANDARDS FOR OUR STUDENTS
...HIGHER STANDARDS FOR OURSELVES

2000


2008



Curriculum Focal Points
for Prekindergarten through Grade 8 Mathematics

2001

2009



Focus in High School Mathematics
Reasoning and Sense Making

2001

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Two Decades of Standards Based Reforms

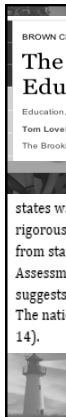
Jack Jennings GET UPDATES FROM JACK JENNINGS
President and CEO, Center on Education Policy
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A Civil Right to a Good Education

Posted: 01/30/2012 11:35 am

So What? Does the CCSS even matter?

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BROWN CENTER REPORT ON AMERICAN EDUCATION NUMBER 14

The 2012 Brown Center Report on American Education

Education, K-12 Education
Tom Loveless, Senior Fellow, Governance Studies
The Brookings Institution

states was also unrelated to student achievement. Students in states with a well-articulated rigorous curriculum and high benchmarks for proficiency fared no better than students from states with inferior curriculum standards and easier assessments on the National Assessment of Educational Progress. As the study concluded, "The empirical evidence suggests that the Common Core will have little effect on American students' achievement. The nation will have to *look elsewhere* for ways to improve its schools" (Loveless, 2012, p. 14).

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Turning Vision Into Action

By Timothy Kanold

SUNDAY, SEPTEMBER 18, 2011

The Primary Barrier to CCSS Implementation

Recently, I have been giving a lot of thought to the probability there will not be an authentic and successful implementation of the Common Core States Standards (CCSS). It will require much more than a first order of change in our nations' schools. And I am not sure we are up for it. We have not been for the past twenty years, what will be different now? And where does the hope of implementation lie?

As of late August, 2011, 44 states and the District of Columbia have adopted the voluntary Common Core States' Standards in English Language Arts (ELA) and Mathematics. Despite some of the rhetoric and representations regarding the CCSS, these are not national standards developed by the federal government. The CCSS K-12 standards for learning were released by the National Governors Association and the Council of Chief State School Officers, in June 2010 with the hopes of creating a consistent set of learning expectations K-12 across the states. You can click here for access to the full set of the Common Core States Standards in ELA and Mathematics and more.

The June 2010 release included a commitment to begin testing in the 2014-2015 school year, and two assessment consortia emerged - PARCC and SMARTer Balanced. A little more than one year later, these state led consortia are beginning the effort to design curricular frameworks aligned with the CCSS for public review and reaction this fall. You can view and review these frameworks and find out more about which consortia your state is a member of, at the PARCC or SMARTer Balanced websites.

ABOUT ME
Timothy Kanold
 I served as the Director of Mathematics and Science and as Superintendent at Adlai E. Stevenson USD 125 in Lincolnshire, Illinois. I am an author for Houghton Mifflin Harcourt and Solution Tree Publishing and have a recently released book with Solution Tree Press: The Five Disciplines of PLC Leaders. I am the founder and director of E2-PLC Learning Group- a professional development learning team designed to provide support in school leadership as well as mathematics program success. View my complete profile

TWITTER

 My latest blog post: <http://t.co/1m0u0u0u0u> Why we probably won't be able to implement the CCSS initiatives. #edchat #mathchat #parcc #smarter #reply #comment #share
 Common Core States Standards Implementation. State Council, CIP Study

The CCSS and the corresponding 2015 assessments will allow you to lead...

An End to the Era of mathematics improvement by Invitation

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First Order Change

Working within existing paradigms with marginal disturbance to the system...

Yields pockets of Excellence

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Second Order Change

Second-order change requires working outside existing paradigms by embracing new paradigms for how you think and practice...

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Leading 2nd order change: The Leadership Discipline of Accountability and Celebration

*The promise to yourself and others to deliver specific and defined improved student achievement results and to **monitor stakeholder actions** that will lead to those improved results; **with consequences**.*

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Moving the Vision of the Common Core into Action!

- Five Paradigms will be required for you to close the CCSS Vision Implementation gap?

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Paradigm of collaboration


Better at ... **Equity and Teacher knowledge**

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Can you work together to get better?

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CCSS Paradigm Shifts

1. Professional Development as a PLC

The CCSS require a paradigm shift in the *grain size of change* beyond the individual isolated teacher or leader..


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...Understands that "smallest unit of change" must come from the teacher...

...of "professional development" as a .57 Vs. .63

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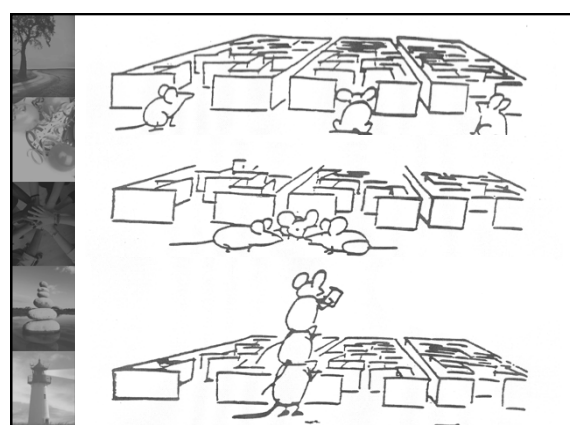


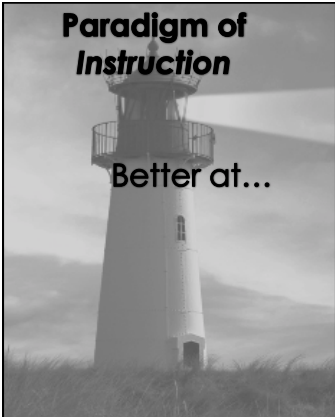
The CCSS M.P.'s and Equity...

Equity begins with an understanding of how the selection of tasks, the assessment of those tasks, the technology used & the quality of feedback

Is so widely variant from teacher to teacher

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Paradigm of Instruction

Better at...

Demonstrations of understanding and procedural fluency

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Five CCSS Paradigm Shifts

2. Instruction

The CCSS require a paradigm shift to daily lesson design that accommodate a focus on the *process of learning and developing deep student understanding of the standards.*

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The Standards for *Mathematical Practice*

The first three words of each of the 8 mathematical practices...

Mathematically Proficient Students...


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Standards for Mathematical Practice

Describe the thinking processes, habits of mind and dispositions that students need to develop a deep, flexible, and enduring understanding of mathematics; in this sense they are also a means to an end.


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The Standards for Mathematical Practice

Lesson Planning from the "*Student's Point of View*": Deepening the student learning Experience...

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Standards for Mathematical Practice

SP1. Make sense of problems

"....they [students] analyze givens, constraints, relationships and goals.they monitor and evaluate their progress and change course if necessary.and they continually ask themselves "Does this make sense?"


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MP # 3 Construct viable arguments and critique the reasoning of others

- 1) Students make conjectures
- 2) Students justify their conclusions and communicate them to peers
- 3) Students compare the effectiveness of two plausible arguments
- 4) Students listen and respond to the arguments of peers for sense making and clarity

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The Standards for Mathematical Practice

Qualitative Reasoning and McDonald's 

With a shoulder partner!
Wikipedia reports that 8% of all Americans eat at McDonalds every day
 310 Million Americans and 12,800 McDonalds...
 Make a conjecture and create a mathematical argument

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The Standards for [Student] Mathematical Practice

SMP # 4 Model with Mathematics
Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace...

SMP # 2 Reason abstractly and quantitatively
Mathematically proficient students make sense of quantities and their relationships in problem situations...

How could this become part of your every Unit lesson planning?

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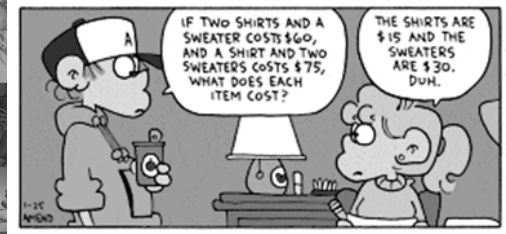
AAAA! I CAN'T DO THESE MATH PROBLEMS! WHY AM I SO STUPID?!

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"IF $2x + y = 60$ AND $x + 2y = 75$, SOLVE FOR X AND Y." HOW THE HECK DO I FIGURE THAT OUT?!

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IF TWO SHIRTS AND A SWEATER COSTS \$60, AND A SHIRT AND TWO SWEATERS COSTS \$75, WHAT DOES EACH ITEM COST?

THE SHIRTS ARE \$15 AND THE SWEATERS ARE \$30. DUH.

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Five CCSS Paradigm Shifts

3. Content

The CCSS require a paradigm shift to a "less (fewer standards) is more (deeper rigor with understanding)" at every grade level.

Ensures greater clarity and low teacher-to-teacher variance on the questions, "Learn What and Learn How?"

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CCSS in Mathematics

The Domains, Clusters, Standards

Grade 6

Five Domains:

- Ratio and Proportional Relationships
- The number System
- Expressions and Equations
- Geometry
- Statistics and Probability

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CCSS in Mathematics

Grade 6

10 Clusters around 29 Standards

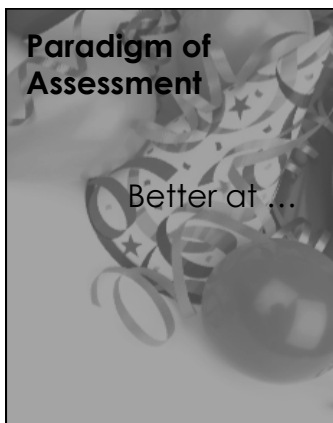
The Grain size of change for a unit is No longer a Standard a day...

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Five CCSS Paradigm Shifts

1. Work as a PLC
2. *Instruction:* Teach for student engagement and understanding, then procedural fluency.
3. *Content:* Less will be More (fewer standards more Rigor)

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Paradigm of Assessment

Better at ...

Formative assessment

Means not ends

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Levels of Certainty

YES - Evaluating the Evidence – John Hattie (2009) meta-analysis of over 800 studies...

Teacher – Student relationships - .72



Professional development (as a PLC)- .63

Effective Teacher Instruction- .75

Vocabulary programs - .67

Assessment as Formative Feedback - .73

VISIBLE LEARNING
A SYNTHESIS OF OVER
800 META-ANALYSES
RELATING TO ACHIEVEMENT

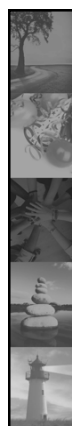
Five CCSS Paradigm Shifts

4. Assessment

The CCSS require a paradigm shift toward assessment as a multi-faceted process of formative assessment development.

How will you know if each student is learning becomes a significant question for you and the collaborative team.

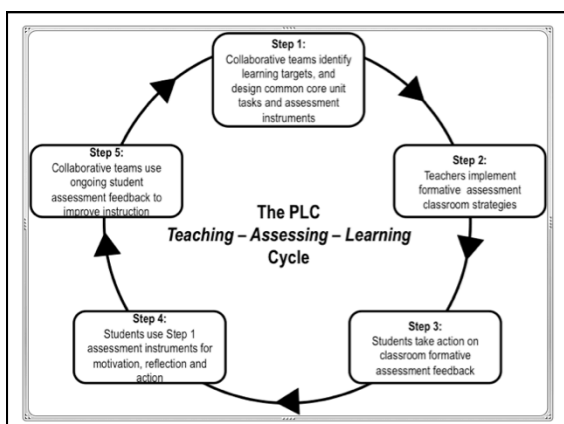
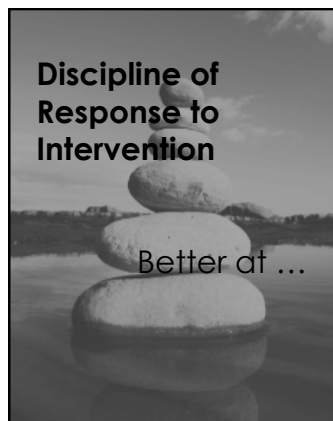
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The Purpose and the pursuit of District Benchmark testing... p.4

1. Benchmark Tests are **Assessment instruments** – are they any good, and how do you know?
2. Benchmark tests are **Diagnostic** – the patient is ill. So, what?
3. Benchmark tests are **Formative** – the patient is ill, and here is the **action** the patient and the doctor will take

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Discipline of Response to Intervention

Better at ...

Required Student support

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Five CCSS Paradigm Shifts

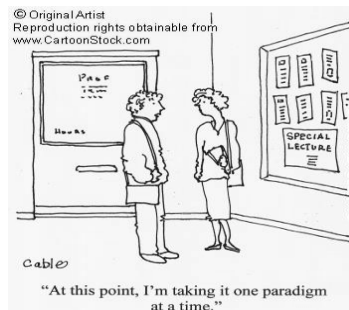
5. Intervention –

The CCSS require a paradigm shift toward a team and school response to intervention (RTI) that is **Required**.

How will you respond and act on evidence (or lack of evidence) of student learning in your school or district?

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Second Order Paradigms



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<http://www.mathedleadership.org/>
NCSM

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LYNN HANCOCK
superintendent, school, mathematics specialist

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and more

Latest News, including...
A Priority Research Agenda for Understanding the Influence of the CCSS for Mathematics
Resources, including...
Inside Mathematics
CCSS Analysis Tools & PD Materials
NCSM Illustrating Mathematical Practices
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2012 PLC Summit Implementing Common Core Mathematics in a PLC

"These standards are not intended to be new names for old ways of doing business. They are a call to take the next step. It is time for states to work together to build on lessons learned from two decades of standards-based reforms. It is time to recognize that standards are not just promises to our children, but promises we intend to keep."

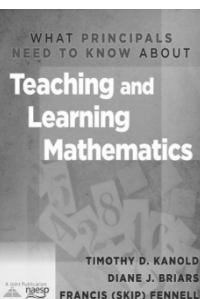
February 23rd, 2012

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Support for implementation of the CCSS



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